QH
95.3
.W516
MOLL

West American Scientist
V. 12 no. 8 (whole no. 109)
Jan. 1907

Division of Mollusks
Smithsonian Institution

Sample copy free—please subscribe.

The West American Scientist.

Vol. XII. No. 8. *January, 1902.* *Whole No. 109.*

Established 1884.
THE WEST AMERICAN SCIENTIST.
Published monthly.
Price 10c a copy; $1 a year; $10 for life.
Charles Russell Orcutt, Editor.
Number 365 Twenty-first Street,
San Diego, California, U. S. A.

ADVERTISEMENTS.

Publicity is the life of trade, the key to modern business success. Let the world know what you have, and what you can do, and you will be kept busy, if you have valid claims, properly presented, worthy of attention. There are many ways—often delusive—of obtaining publicity. Experienced business men prefer space in periodicals—newspapers or magazines—to circulars, sign boards, hotel registers, and a thousand other ways invented by solicitors. Magazines derive the larger portion of their income from selling space in their pages. Scientific magazines have often failed for lack of sufficient effort to win this patronage from the business world. Quality is often valued as highly as circulation. We aim to supply both to our customers, and will treat our advertising pages as carefully as our editorials.

The flat rate will prevail in our office.

Twenty-five cents a line, nonpareil, each insertion.

ORCUTT, San Diego, California.

Insurance Agent and Notary Public.

DODSON, A. E.:
No. 909 Fourth St., San Diego, Cal.

MINERALS.

STILWELL, L. W.: Deadwood, So. Dak.

ATTORNEYS.

CONKLIN, N. H.:
Practices in all courts of the state and United States. No. 920 Fifth street.

HAMMACK, N. S.:
Real Estate and Loans. Lawyer Blk.

LAKESIDE HOTEL

Lakeside, San Diego county, California.

This Hotel is a convenient place to stop on the way to and from the mines.

First Class in every respect.

Telephone and telegraph.

Baths and electric bells.

Baverstock & Staples, Assayers and
322 W. 1st street, Analysts.
Los Hngeles, Cal, Mines examined.
Thoroughly equipped for 500 lb tests.

GARDEN AND FOREST:
Odd numbers wanted in exchange.
ORCUTT, San Diego, California.

COINS.

Wanted—One peso of Paruguay.
5 frs of Helvetia.

BOOKS.

FOR SALE —
BOOKS AND MAGAZINES.
ORCUTT, San Diego, California.

MAY 30 1989
LIBRARIES

FOSSILS.

40 named tertiary fossils. $3

ORCUTT, San Diego, California.

Botany of California!

This work, in 2 large volumes, may be had for $12—$1 extra for transportation.

☞'Botany of Southern California' is a pamphlet of about 70 pages, by Charles Russell Orcutt, editor of the West American Scientist, San Diego, California, containing a provisional check-list of the known species, with descriptions and economic notes concerning many. $1

ORCUTT, San Diego, California.

Review of the Cactaceæ

By Charles Russell Orcutt. Original descriptions carefully compiled and reprinted, with synonymy, and bibliographical references as complete as the author's library will permit. Illustrated. Copious excerpts, with field and garden notes. Vol. I is devoted to the species of the United states, and issued in 4 parts at $3

"Very valuable.....above all works that come to my table I want a complete set of this."—Thomas Meehan.

Edition limited to 200 copies.

ORCUTT, San Diego, California.

TO EDUCATIONAL INSTITUTIONS:—

We will give to any college or school, while present supply lasts (and we have 100,000 duplicate specimens), a collection of 100 varieties of shells, minerals, fossils, etc.—mostly Californian, named and mainly with printed labels, on the following conditions:—

1—That the school shall provide a suitable cabinet for its permanent preservation and display.

2—That the school shall subscribe for 1 year to CALIFORNIA ART & NATURE, and pay transportation on specimens.

Estimated value of collection is $10.

Kindly cooperate with us in creating a greater interest in the study of nature in our schools.

ART & NATURE COMPANY,
No. 868 Fifteenth street,
San Diego, California.

The West American Scientist will be sent to new subscribers for one year for only 25 cents—payable in cash or anything of value for our library or museum.

50 YEARS' EXPERIENCE

PATENTS

TRADE MARKS
DESIGNS
COPYRIGHTS &C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents.

Patents taken through Munn & Co. receive *special notice*, without charge, in the

Scientific American.

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, $3 a year; four months, $1. Sold by all newsdealers.

MUNN & Co. 361 Broadway, **New York**

Branch Office, 625 F St., Washington, D. C.

STAMPS.

Wanted stamps in exchange for shells

ORCUTT, San Diego, California.

West American MOLLUSCA

Descriptions, notes, synonymy, bibliography, etc, collected and published in 4 page 8° numbers, at $1 for Vol. 1.

☞We also offer many species for sale —including over 2000 varieties.

ORCUTT, San Diego, California.

WADE & WADE

Analytical Chemists and Assayers,
115½ North Main st. (Tel. Green 1704),
Los Angeles, Cal.

Chemical Analysis, Assaying, Milling, Concentration and Cyanide tests, etc

FINTZELBERG, THEODORE:
Real Estate, Insurance, Commission, Notary Public. P. O. box 694.
Express block.

EDUCATIONAL.

How to get a commercial education, the surest stepping stone to business success.

Elkhart Normal School and Business Institute.
Elkhart, Indiana.

The West American Scientist.

Vol. XII. No. 8. *January, 1902.* *Whole No. 109.*

Established 1884.
THE WEST AMERICAN SCIENTIST.
Published monthly.
Price 10c a copy; $1 a year; $10 for life.
Charles Russell Orcutt, Editor,
Number 365 Twenty-first Street,
San Diego, California, U. S. A.

SAN DIEGO SOCIETY OF NATURAL HISTORY.

On the first day of October, A. D. 1874, Dr. George W. Barnes, Charles Coleman, Jr., (principal of the public school), J. B. Wells (local obseryer of the U. S. Signal Service), Charles J. Fox, L. L. Roberts, W. F. Allen, O. N. Sanford, L. B. Wilson, George W. Marston, E. W. Hendrick and Daniel Cleveland, met at Mr. Cleveland's office in this city and effected the preliminary organization of the San Diego Society of Natural History. Of these eleven persons, the first four have died, the next four have removed from this county, while the last three of them still reside here. Articles of incorporation were filed October 14, 1874. On the 2d of November, 1874, the permanent organization was effected by the election of the following officers: President, Dr. Gorge W. Barnes; vice-president, Daniel Cleveland; secretary, E. W. Hendrick, and treasurer, O. N. Sanford. Dr. Barnes held the office of president until his resignation was presented, because of failing health, about one year before his death, in February, 1890. He was succeeded by Daniel Cleveland, who has been president ever since, with the exception of the years 1892-3, when the Rev. B. F. McDaniel, now of Newton, Mass., was the incumbent.

The object of the society, as declared in its constitution, is "the study of nature, the acquirement and diffusion of scientific knowledge, and the collection and preservation of materials pertaining thereto."

To this purpose the society has ever remained true, during the twenty-seven years of its existence, and it is believed that this association is the first scientific society organized in this state south of San Francisco. During its first year, meetings were held weekly, and were always well attended. Thereafter, the meetings, held once a month, were interesting and successful. About 1889, however, interest in the sciety seemed to abate somewhat, and for some years meetings were not regularly held. It is hoped that the time has now come when the regular meetings and work of the society can be successfully resumed.

In this brief article upon the society only a small portion of its work, and a few items of special interest connected with it, can be mentioned. At one of the first regular meetings of the society —Nov. 9, 1874—contributions of scientific material—biological and literary—began to flow in, and have contined, until the society has now amassed a considerable museum and library. Unfortunately, as the society possesses no building of its own, this material is packed away where it is not accessible. As early as July, 1875, the society, at the request of Gen. Myer, Chief Signal Officer, U. S. A., appointed a local meteorological committee to co-operate with him. Later in the year, this committee, aided by an appropriation of $100, granted by the county board of supervisors, established at different

points in the interior of this county ten weather stations, equipped with all the necessary instruments, blanks and books for observing, reporting and recording meteorological conditions. Resident volunteer observers were secured for all the stations, who reported to the society, which, in turn, reported to the chief signal officer. Stations were thus established at Banner, Campo, El Cajon, Julian, Pine Valley, Poway, San Pasqual, Stonewall mine, in the Cuyamaca valley, and at Temecula, and were maintained—according to the good faith and perserverance of the observer—for periods ranging from one to ten years. The meteorological data thus obtained by the society is interesting and valuable.

In this conenction, attention may be called to a few interesting "weather" items contained in the records of the society. On the 12th of March, 1876, J. S. Harbison reported to the society that "while certain curious clouds were visible, the atmosphere had qualities unfavorable to honey making. Dr. Barnes thought that northerly winds contained more electricity, and may have some effect in this way. Mr. Harbison stated further that while these 'curious clouds' were present horses seemed to be nervous. Doctors had observed at such time unusual nervousness in their patients." On Sept. 7, 1877, it was stated by the meteorological committee that "settlers regarded this season—1876-7—as the dryest year they have known in San Diego county, as is indicated by the drying up of the lagoons, streams, springs, etc.; the limited rainfall of the season (amounting to only 3.63 inches), and the rapidity of exaporation caused by the unusual heat, and the drying (north) winds." Nov. 2, 1877, "C. J. Fox called attention to the unusually early precipitation of snow on the Cuyamaca mountains, which occurred October 29, 1877." Brilliant meteors were observed here Nov. 30, 1877. Dr. Barnes reported that in the fourteen months during which the sunset observations of the sky had been made at San Diego, 86 per cent of the forecasts of the anticipated weather for the succeeding twenty-four hours had been verified. Dec. 6, 1878, Dr. Barnes reported upon the heat wave of September, 1878. March 3, 1897, Ford A. Carpenter, local weather observer, reported that "so far at least as the United States is concerned, San Diego has a unique record in the amount of sunshine in the winter months, and throughout the year—the amount of sunshine being relatively very great during the winter months—when it is needed—and small during the summer months, when it would be objectionable."

Oct. 11, 1879 the meteorological committee reported successful tests for ozone made at the San Diego and Campo weather stations for September, 1879.

The old bronze cannon, "El Jupiter," cast at Manila in 1798, was brought from Old San Diego in November, 1876, to celebrate the supposed election of Samuel J. Tilden to the presidency, over Gen. R. B. Hays. In December, 1880, some mischevious boys filled the gun with mud and fired it at night, hoping to make a great noise, in which they succeeded, bursting the cannon and almost killing one of the boys at the same time. The fragments of the gun were collected by Robert Bailey for his museum. On January 7, 1881, the citizens of "Old Town," who claimed to be the owners of the gun, donated it in writing to the society, and the board of city trustees confirmed this action. Mr. Bailey surrendered the gun to the society, which had the pieces put together. Jan. 17, 1882, the board of city trustees presented to the society, from the city archives, a letter written in 1850 by Capt. J. Hayden, U. S. A., to J. H. Bean, then alcade of San Diego, relating to the history of this old cannon. May 13, 1898, "El Jupiter" was placed on exhibition at the chamber of commerce, where it now is.

May 7, 1880, a fine specimen of the California vulture (Cathartes Californianus), which had long been shot in the Cuyamaca mountains, was presented to the society. It measured ten (10) feet across the wings. Unfortunately, this very valuable skin was not preserved, as there was then no taxidermist at San Diego.

Jan. 17, 1882, Theodore L. Rogers, vice-

president of the California Southern Railway company, donated to the society the first passenger ticket issued by said company.

March 10, 1882, D. Cleveland exhibited a specimen of Ophlog'osum, recently named O. Californicum—a new species—which was collected at San Diego in 1850 by Dr. C. C. Parry, then botanist of the Mexican Boundary Commission. The plant was lost, with others, in transmission to the east, and not seen again until it was rediscovered here, a few days before by Dr. Parry and Mr. Cleveland. Nov. 2, 1883, Mrs. Z. Cronyn reported that some tubers of the common potato (Solanum tuberosum) which had been collected by J. G. Lemmon, among the indigenous plants of the Chirricahua mountains of Arizona, were planted by her and had yielded a good crop of tubers of increased size. This is, perhaps, the first discovery of the potato as indigenous to North America. It is generally regarded as a South American plant, naturalized in North America and Europe.

Nov. 2, 1883, Mr. Cleveland presented a written communication upon Pinus Torreyana, growing in Soledad canyon. A committee was appointed to take measures to protect this rare tree. August 7, 1883, Joseph Surr reported that, at the request of this committee, the county board of supervisors, and the board of city trustees had each passed ordinances offering a reward of $100 for the arrest and conviction of any person who should cut, destroy, or injure any of these trees. This action stopped the cutting down and sale of said trees for fire wood, which at one time threatened the destruction of the whole grove..

July 24, 1899, the common council of the city of San Diego, by ordinance, reserved the land—about 369 acres—upon which these trees are standing, as a public park, designating it as "Torrey Pine Park." The park contains about 2,700 trees, and is located about twenty miles north of the city center, though within the municipal limits.

Oct. 2, 1884, on motion of John G. Capron, it was resolved that the United States congress be petitioned to grant to this society sections 12, 13 and 14 on San Miguel mountain for an astronomical observatory. The petition was sent, prominent senators and representatives became favorably interested in the project, and at one time it seemed as though the grant would be made.

In March, 1887, E. W. Morse and Mary C. Morse, his wife, donated to the society, lot I in block 18 of Horton's addition, upon which Unity hall now stands, under a lease from this society. The society pledged itself to erect a building upon the lot for the use of the society, as soon as practicable.

Aug. 26, 1887, Henry Hemphill donated a large collection of shells to the society.

In the winter of 1892-3 the chamber of commerce undertook the preparation of an exhibit of fishes, in alcohol—the property of this society—for the Columbian exposition at Chicago in 1893.

Dec. 10, 1897, E. W. Morse reported the successful grafting, at Alpine, in this county, of the eastern chestnut upon the common oak.

Many scientific papers have been presented, and many interesting lectures and addresses have been made to the society. Some of these have been of much more than local and transient interest and value. At present the society meets monthly at the house of some member. Papers are presented and addresses made upon some scientific subject (often one of special local interest), announced the previous month. The December, 1901, meeting was held at the residence of Miss Lena Polhamus, and the subject discussed was the marine life of San Diegan waters.

The society begins the year 1902 out of debt, with a respectable cash balance in the treasury, and owns a valuable building lot centrally located, upon which, it is hoped, a building for the society will be erected in the near future.

The present officers of the society are: President, Daniel Cleveland; vice-president, Mrs. Harriet Phillips; secretary, Will H. Holcomb, and treasurer, Theodore Fintzelberg.

DANIEL CLEVELAND.

PERIODICALS.

AMERICAN BOTANIST:
Binghamton, N. Y.

Asa Gray bulletin: ii 4 6; iii 8–11; iv 1 2 4–6; v 1 2 4–6; vi–viii 1–6 each wanted.

AMERICAN ECONOMIST:
No. 135 W. 23d st., New York, N. Y.

AMERICAN ORNITHOLOGY:
Chas. K. Read, Sta. A. Worcester, Mass.; 50 cts a year (monthly). "The best illustrated bird magazine." Send 10 cts for 3 months' trial. Pictures of birds, nests and eggs.

BOTANICAL GAZETTE:

BRYOLOGIST; 78 Orange st., Brooklyn, N. Y.

With the January number the Bryologist becomes a bi-monthly. The features of the year will be a series of notes on nomenclature, by Mrs. Elizabeth G. Britton; a continuation of the illurtrated series on the liceens by Mrs. Harris, and of the hepatics by Mr. Barbour; descriptions and illustrations of new and rare mosses; popular articles with keys on the more difficult genera, as well as tech nical articles by specialists. Its pages are open to receive notes and short articles from students of the mosses, hepatics and lichens. $1 a year, 20c. a copy—sample free. Vols. 1–4 and index, $1.50. Address Mrsr Annie Morrill Smith,
78 Orange st., Brooklyn, N. Y.

CANADIAN ENTOMOLOGIST:
No. 429 Wellington st., London, Ont., Canada.

CHRISTIAN ADVOCATE:
Beaver Springs, Pa.

CONDOR:
Santa Clara, California.
Bi-monthly bulletin of the Cooper ornithological club.

CURRENT ADVERTISING:
Published monthly by Charles Austin Bates, New York. $2 a year.

ENGINEERING AND MINING JOURNAL:
253 Broadway, New York.
"The best and most influential mining paper in the world." Weekly edition, $5 a year; monthly, $1.50 a year. Specimen copy free.

EVANGEL: Scranton, Pa.

FARM AND FIRESIDE:
Springfield, Ohio.

FERN BULLETIN: Binghamton, N. Y.

FLORISTS' EXCHANGE:

GARDENING:

HEALTH-CULTURE:
No. 503 Fifth Avenue, New York.

This popular paper is a practical wide-awake magazine of physical culture and hygiene. The editorials consider a number of timely topics. This magazine contains a great amount of miscellaneous matter pertaining to health culture, including Answers to Correspondents, book notices, etc., and certainly well worth the price, 10 cents a number, or $1.00 a year.

LADIES' HOME JOURNAL:
Philadelphia, Pennsylvania.

Far surpasses its rivals, and become the highest type of artistic printing, with high literary merit.

MEEHAN'S MONTHLY:
Devoted to general gardening and wild flowers. $2 a year. Germantown, Philadelphia, Pa. Each issue contains a colored portrait by Prang of some American wild plant or flower, with description, and various notes on horticulture.

MINERAL COLLECTOR:
No. 238 Greene street, New York, N. Y.
The only magazine in the country devoted entirely to mineralogy. Exchange page free to subscribers. Send for sample copy. Published monthly, $1.00 a year.
Now in its eighth year.
Arthur Chamberlain, Editor.

MINING: Spokane, Washington.
Journal of the northwest mining association. $1 a yr. Monthly.

MINNESOTA BOTANICAL STUDIES:

MONATSSCHRIFT fur Kakteenkunde:

MONITOR: Hamburg, Ill.

MUHLENBERGIA:
No. 547 W. Walnut st., Lancaster, Pa.
A journal of botany edited and published by A. A. Heller. $1 a volume.

NATURE STUDY: Manchester, N. H.

NAUTILUS:
Cor. 19th and Race sts., Philadelphia, Pa.
Devoted to the interests of conchologists. Monthly, $1 a year.

OHIO NATURALIST: Columbus, O.
Published by the biological club of the Ohio state university. 50c a year of 8 numbers.

OOLOGIST: Albion, N. Y.

PACIFIC ENSIGN:

PHILATELIC West and Camera News:
Superior, Nebraska

PITTONIA:

POPULAR SCIENCE NEWS:
No. 108 Fulton street, New York, N. Y.

PRESS AND HORTICULTURIST:

RAILROAD DIGEST:
No 132 Nassau st., New York, N. Y.

RHODORA: 150 Commercial st., Boston, Mass.

SCIENTIFIC AMERICAN:

SENTINEL: Ramona, Cal.

Published by John G. Overshiner—the only paper published in the 3d Supervisoral District, which represents the horticultural, agricultural, mineral and commercial interests of the Back Country in particular and San Diego county in general. $1 a year. Advertising reasonable.

SUCCESS WITH FLOWERS:
West Grove, Pennsylvania.

VACCINATION:
No. 132 N. 12th st., Terre Haute, Ind.
Issued monthly for the Anti-Vaccination society of America.

VERMONT JOURNAL: Windsor, Vt.

VICK'S MAGAZINE:

ASTHMA CURE FREE!

ASTHMALENE Brings Instant Relief and Permanent Cure in All Cases.
SENT ABSOLUTELY FREE ON RECEIPT OF POSTAL.
WRITE YOUR NAME AND ADDRESS PLAINLY.

There is nothing like Asthmalene. It brings instant relief, even in the worst cases. It cures when all else fails.

The Rev C F WELLS, of Villa Ridge, Ill, says: "Your trial bottle of Asthmalene received in good condition. I cannot tell how thankful I feel for the good derived from it. I was a slave, chained with putrid sore throat and Asthma for ten years. I despaired of ever being cured. I saw your advertisement for the cure of this dreadful and tormenting disease, Asthma, and thought you had over spoken yourselves, but resolved to give it a trial. To my astonishment, the trial acted like a charm. Send me a full-size bottle."

Rev. Dr Morris Wechsler.
Rabbi of the Cong Bnai Israel.
New York, January 3 1901.

DRS. TAFT BROS.' MEDICINE CO,
Gentlemen: Your Asthmalene is an excellent remedy for Asthma and Hay Fever, and its composition alleviates all troubles which combine with Asthma Its success is astonishing and wonderful.
After having it carefully analyzed, we can state that Asthmalene contains no opium, morphine, chloroform or ether.

Very truly yours, REV. DR. MORRIS WECHSLER.

DR. TAFT BROS. MEDICINE CO. AVON SPRINGS, N. Y., Feb. 1, 1901.

Gentlemen: I write this testimonial from a sense of duty, having tested the wonderful effect of your Asthmalene, for the cure of Asthma. My wife has been afflicted with spasmodic asthma for the past 12 years. Having exhausted my own skillas well as many others, I chanced to see your sign upon your windows on 130th street New York, I at once obtained a bottle of Asthmalene. My wife commenced taking it about the first of November. I very soon noticed a radical improvement. After using one bottle her Asthma had disappeared and she is entirely free from all symptoms. I feel that I can consistently recommend the medicine to all who are afflicted with this distressing disease. Yours respectfully, O. D. PHELPS, M. D.

DR. TAFT BROS. MEDICINE CO. 67 E. 129th st., N. Y., Feb. 5, 1901.

Gentlemen: I was troubled with Asthma for 22 years. I have tried numerous remedies, but they have all failed. I ran across your advertisement and started with a trial bottle. I found relief at once. I have since purchased your full-size bottle, and I am ever grateful. I have a family of 4 children, and for 6 years was unable to work. I am now in the best of health and am doing business every day. This testimony you can make such use of as you see fit.
Home address, 235 Rivington street. S RAPHAEL.

TRIAL BOTTLE SENT ABSOLUTELY FREE ON RECEIPT OF POSTAL.

Do not delay, write at once DR. TAFT BROS. MEDICINE CO., 79 E. 130th st. N. Y.

American and Mexican Mining Co.
of San Francisco, California.

The objects of this association are to further the systematic and scientific exploration of West America, and to foster and promote in every legitimate manner the various branches of the mineral industries. There are hundreds of undeveloped mineral properties in the western United States and Mexico, containing gold, silver, copper, iron, lead, and other metals, or valuable minerals, waiting for some one with capital and business judgment to turn them into paying mines. No investment yields better returns than a good mine. But there are thousands of alleged mines or prospects, and many fortunes have been spent on worthless claims, while valuable properties are often ignored for years, until chance or education reveals their value.

Mr. J. F. Delgado, No. 564 Fourth street, San Diego, California, as manager of this company, has become acquainted with a great variety of mines and prospects and made wide acquaintance among prospectors and miners in this state and in Lower California, Sonora, Sinaloa and elsewhere. He has a complete assay office and spacious quarters at low rental, the assay outfit costing over $500, and besides a good prospecting outfit in California, and is supplied with an equally good outfit for field work in Lower California, and is himself a practical prospector and miner, with years of experience. Having received numerous applications from mine owners for the treatment of ores, he is now desirous of adding a custom mill for the extraction of gold and other metals. Over 175 tons of ore are now awaiting the proposed plant, for which no doubt abundant work could be constantly had. As Mr. Delgado is necessarily much in the field examining mines or conducting mining operations, he desires a working, resident partner with some capital to take charge of the custom mill, and to attend to the correspondence of the company when he is absent.

An excellent opportunity for the right man to engage in a profitable occupation. Correspondence solicited.

MINES.

Mines examined. Conservative reports furnished. Rare minerals, meteorites, gems, pearls, etc. wanted

Among properties which have been in our hands for disposal, are mines or 'prospects' in great variety, including Antimony, Copper, Gold, Iron, Lithium, Marble, Mica, Molybdenite, Nickel, Sulphur, Wolframite, Zinc, etc.

We would be pleased to submit propositions to investors, or to list good improved or undeveloped properties
ORCUTT, San Diego, California.

A free milling gold "prospect" has been placed in our hands for sale, said to have an 85-foot shaft, and other workings, with a 5-foot ledge of ore assaying $12.50 per ton. Good roads, wood and water. Price, $20,000. An examination and conservative report will be made on reasonable terms. Address the editor.

SAN DIEGO, CALIFORNIA.

Residence and business property, improved or unimproved. Ranches, and lands for colonization, for sale or trade.
Mining property a specialty.
Oil lands in large or small tracts.
Investments recommended
Loans negotiated Taxespaid, etc.
ORCUTT, San Diego, California.

Purchase your

FOOTWEAR at

LLEWELYN'S,

728 Fifth street.

CLEVELAND COPPER GROUP.

One claim of 20.66 acres, patented.
Four contiguous claims, unpatented.
Total area: 88 acres, 4,533 square feet.
Located on the west side of the Penos Altos range, Penos Altos mining district, Grant county, New Mexico, 2 miles west of the town of Penos Altos, and 8 miles north of Silver City, the county seat and railroad station. Altitude, 7,500 feet. Altitude of Silver City, 6,000 feet.
Ores free smelting, 3 to 60 per cent. copper, containing lime in a few places adjoining dolomite wall. Shipments of ore average 8 to 13 per cent. copper, iron and silica neutral.
Price, $50,000; six months' developing bond; shipping privileges.
UTTER, GEORGE H.:
Silver City, New Mexico.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 01425 0948

est American Scientist
V. 12 no. 8 (whole no. 109)
Jan. 1907